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FIRST REPORT OF A ZOARCID FISH FROM THE MEDITERRANEAN (*MELANOSTIGMA ATLANTICUM* KOFOED)

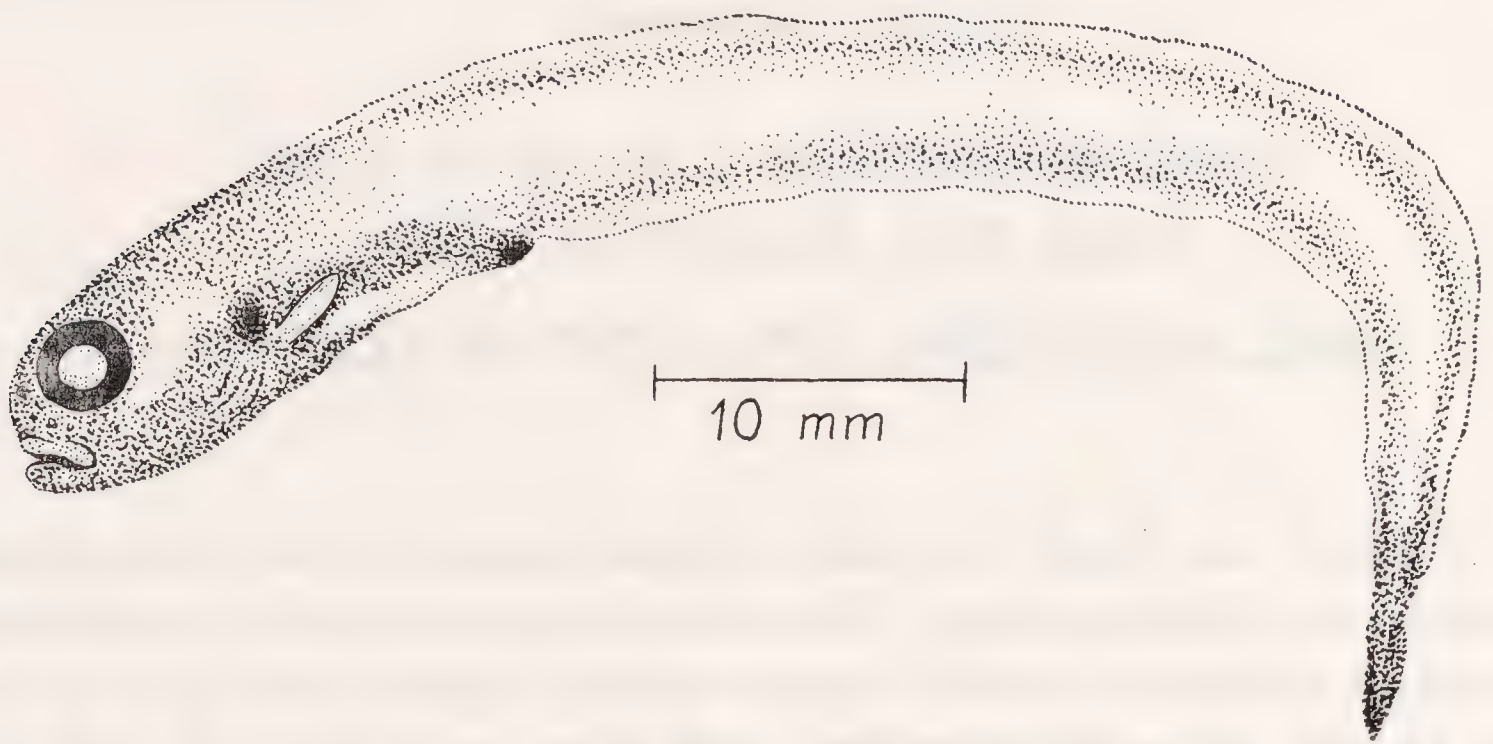
Fishes of the family Zoarcidae (Ophidioidea) have not been found till now in the Mediterranean. Their distribution is chiefly boreo-arctic. However, a specimen recently caught in the Ligurian sea is to be referred to the genus *Melanostigma*, belonging to that family. This is indeed a remarkable addition to the list of our fishes.

The specimen was captured at 450 m depth, off San Remo (Western part of the Gulf of Genoa: 43° 47' N, 7° 46' E) by Mr. P.E. Gavagnin, who presented it to the Museum of Genoa (January 23, 1970), where is now preserved (Cat. n. 42527). This little and delicate animal immediately appeared as very different from all the Mediterranean fishes previously known. I received it in good condition, shortly after having been collected, and the following main characters have been noted.

Body elongate, soft, tapering backward. Length about 55 mm (the caudal tip is damaged), preanal length 17,5, height of the middle portion of the body about 4, head 8, eye diameter 3, preorbital 1,5, postorbital 3,5, pectoral 2. Snout short and rounded. Nostril tubular. Mandible prominent. Mouth oblique, rather small. Maxillary ending under the anterior half of the eye. Teeth acute, unequal, in a single series on the jaws. A few, well developed and curved canines on the front part of both jaws. Vomer and palatines with teeth. Eye large,



round. Interorbital narrow. A small prenasal, five suborbital and five preoperculo-mandibular pores. Gill opening small, rounded, entirely above the base of the pectoral fin. Anus well posterior to the pectoral. Scales absent. No evident lateral line. Soft and movable skin, covering also the vertical fins, which have many rays and no spines. As the caudal end is damaged, the rays cannot be counted. Dorsal origin above the pectoral, which is small. Ventrals absent. Body colourless, but head bluish, with many scattered chromatophores. Gill opening, nostrils, anus and posterior end of the tail dark, almost black. Inside of mouth and peritoneum black.



1. *Melanostigma atlanticum* Kofoed. San Remo (Ligurian sea).

This fish is easily identified as a *Melanostigma*. According to the most recent revision (McALLISTER and REES, 1963) such genus (Fam. Zoarcidae, subfam. Gymnelinae) includes three valid species, well separated geographically, living in deep and cold waters. The vertical distribution may be very wide (from the surface to beyond 2500 m) and the biology is poorly known. As no species has been found in the nearest Atlantic zone, we might suspect the existence in the Mediterranean of an endemic, undescribed representative.

This does not seem to be the case and it appears preferable to consider the specimen reported here as a *M. atlanticum* Kofoed. There is a good agreement in the basic features, as the body proportions, and furthermore that is just the species more likely to be expected in such areas as the Eastern Atlantic and the Mediterranean. The fish from

San Remo is very similar to the one figured by McALLISTER and REES (fig. 2 B) and caught in the Gulf of St. Lawrence (Canada). It is quite probably a male, having well developed canine teeth. These are usually absent in the females.

M. atlanticum was described by KOFOED (1952) after an holotype (86 mm, Bergen Mus. Zool.) captured near Rockall, off Scotland, at « M. Sars » st. 101, depth 1853 m (2500 m wire). No other findings are known in the Eastern Atlantic and the main area of distribution is in the Western North Atlantic from Canada to Virginia. Until KOFOED's study, this species was always confounded with *M. gelatinosum* Gunther, 1881 (type of the genus) from Southern Hemisphere, and this name appears also in McALLISTER's list (1960).



2. Geographical distribution of *Melanostigma atlanticum* as presently known (Many captures in NW Atlantic, one in NE Atlantic, one in the Mediterranean).

M. atlanticum reaches at least 130 mm and has 92-99 dorsal rays, 77-84 anal rays, 93-99 vertebrae of which 73-78 caudal. The colour of living specimens is described as brilliant silvery blue on the head and the anterior part of the body. The latter is mainly translucent, but the caudal end is variably red, brown or black. In the Western North Atlantic this Zoarcid is not rare (McALLISTER and REES, 1963; LEIM and SCOTT, 1966) and off Canada is chiefly found along the edge of the continental shelf, 186-1853 m. It is said to feed on copepods and to be preyed upon by *Sebastes*.

The family Zoarcidae is a new one of boreal type that is now discovered in the Western Mediterranean. It is interesting to note that another family having the same character (Cyclopteridae) has recently

been shown to have a Mediterranean representative: *Paraliparis leptochirus* (Tort.), found off Algeria and then France. *M. atlanticum* is almost a novelty for the whole European ichthyofauna. Other Mediterranean specimens must now be looked for as they will allow a better study of this interesting species, that seems to include so widely separated populations.

I feel very indebted to the collector Mr. P.E. Gavagnin (San Remo), to dr. Daniel M. Cohen (U.S. National Museum) and J.C. Nielsen (Mus. Copenhagen) for their invaluable help.

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RIASSUNTO

I pesci della famiglia Zoarcidae erano finora considerati assenti nel Mediterraneo, ma vi sono rappresentati da almeno una specie. Un esemplare lungo circa 55 mm, pescato a 450 m al largo di San Remo (Mar Ligure) è infatti riferibile a *Melanostigma atlanticum* Kofoed, noto nell'Atlantico settentrionale e in particolare presso l'America del Nord.

RÉSUMÉ

Les poissons de la famille Zoarcidae étaient jusqu'ici considéré absents en Méditerranée, où au contraire ils sont représenté par une espèce au moins. Un exemplaire long 55 mm, capturé à 450 m au large de San Remo (Mer Ligurienne) est en effet à rapporter à *Melanostigma atlanticum*, connu dans l'Atlantique septentrionale et particulièrement près de l'Amérique du Nord.